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SEP. 16 1975

Martin B. Biles, Director
Division of Operational Safety, HQ

CARNEGIE-MELLON UNIVERSITY (CMU) CYCLOTRON DISMANTLING PROJECT

The purpose of this memorandum is to summarize the dismantling activities which have been performed or are planned at the CMU, Nuclear Research Center, Saxonburg, Pennsylvania, site for purposes of preparing the site for unrestricted release from a radiological standpoint.

Facility Description and Background

Attachment 1 shows a schematic of the main building (which housed the synchrocyclotron, laboratories, machine shop, and offices) and adjacent ancillary facilities. Not shown (direction of location shown by arrows) are two dormitory buildings used by CMU staff, a small farmhouse and a barn used for equipment storage, an underground counting facility, and a small building once used to house a radio transmitter.

Prior to installation of the accelerator, the site was used by radio station KDKA as a transmitter location. The accelerator, a 440 MeV synchrocyclotron was operated from 1952 until 1970. It was used to accelerate protons, He^{++} ions and deuterons which were used in meson studies and for isotope production.

Actions Taken or Planned

1. All radioactively contaminated/activated personal property has been disposed of by transfer within ERDA or burial as active waste with the exceptions of a hydraulic tank and pumps which will be shipped to a licensed radioactive waste burial ground for disposal.

2. Radioactive waste which was buried in an approximate 2000 ft^2 area about 500 feet east of the main building, has been retrieved and sent to the licensed burial ground at Morehead, Kentucky. Radiation surveys were conducted during the retrieval operations utilizing a thin-end window G-M survey instrument to assure removal of all radioactive waste. Analysis of representative soil samples taken from this area after retrieval operations, indicate radioactivity levels are within expected background levels.

3. Radiation surveys of facilities on the site either have been or will be conducted and documented prior to termination of dismantling activities to provide assurance that the areas are free of radioactive contamination (see item 5 below for specific decontamination criteria for activated portions of the main building). All surveys will be performed utilizing a thin-end window G-M tube with standard electronics.

4. Radiation surveys will be performed and documented for the area outside the main building which was used as a location for cutting of the magnet coils, pole pieces, and yoke during dismantling operations to assure that activated cutting debris has been removed.

5. The major action remaining to be completed involves removal of certain portions of the walls in the cyclotron pit area which became activated as a result of cyclotron operations. Attachment 2 contains drawings of various portions of the cyclotron pit and adjacent walls and shows the radiation levels in the area in mR/hr. Readings were taken with a thin-end window G-M tube with standard electronics and are contact readings unless otherwise indicated. Attachment 3 gives radiation levels in the area of the pit at various distances from the walls and floor. The following decontamination actions relative to this area are planned:

   a. Removal of all activated concrete exhibiting contact radiation levels greater than 0.08 mR/hr (areas outlined in red on Attachment 2).

   b. Disposal of all concrete removed, with levels greater than 0.08 mR/hr, at a licensed burial facility.

   c. Disposal of all concrete removed with levels less than 0.08 mR/hr at a local landfill. Substantial quantities of materials of this type have to be removed to accomplish a. above.

6. Removal of dirt adjacent to the south wall which became activated as a result of cyclotron operation is also planned. Dirt will be removed until radiation levels are reduced to background. Soil samples of the dirt remaining will be taken to document the final condition. Dirt that is removed will be shipped to a licensed burial ground.

After all dismantling actions are completed, a final radiation survey report will be prepared and submitted to ERDA-HQ, CMU, and the Commonwealth of Pennsylvania, along with a recommendation that the site be released for unrestricted use. CMU plans to include a copy of the final survey report in the permanent land records for the site.

Current scheduling calls for completion of dismantling activities and the final site survey by mid-December and sale of the property by the CMU by the end of December.

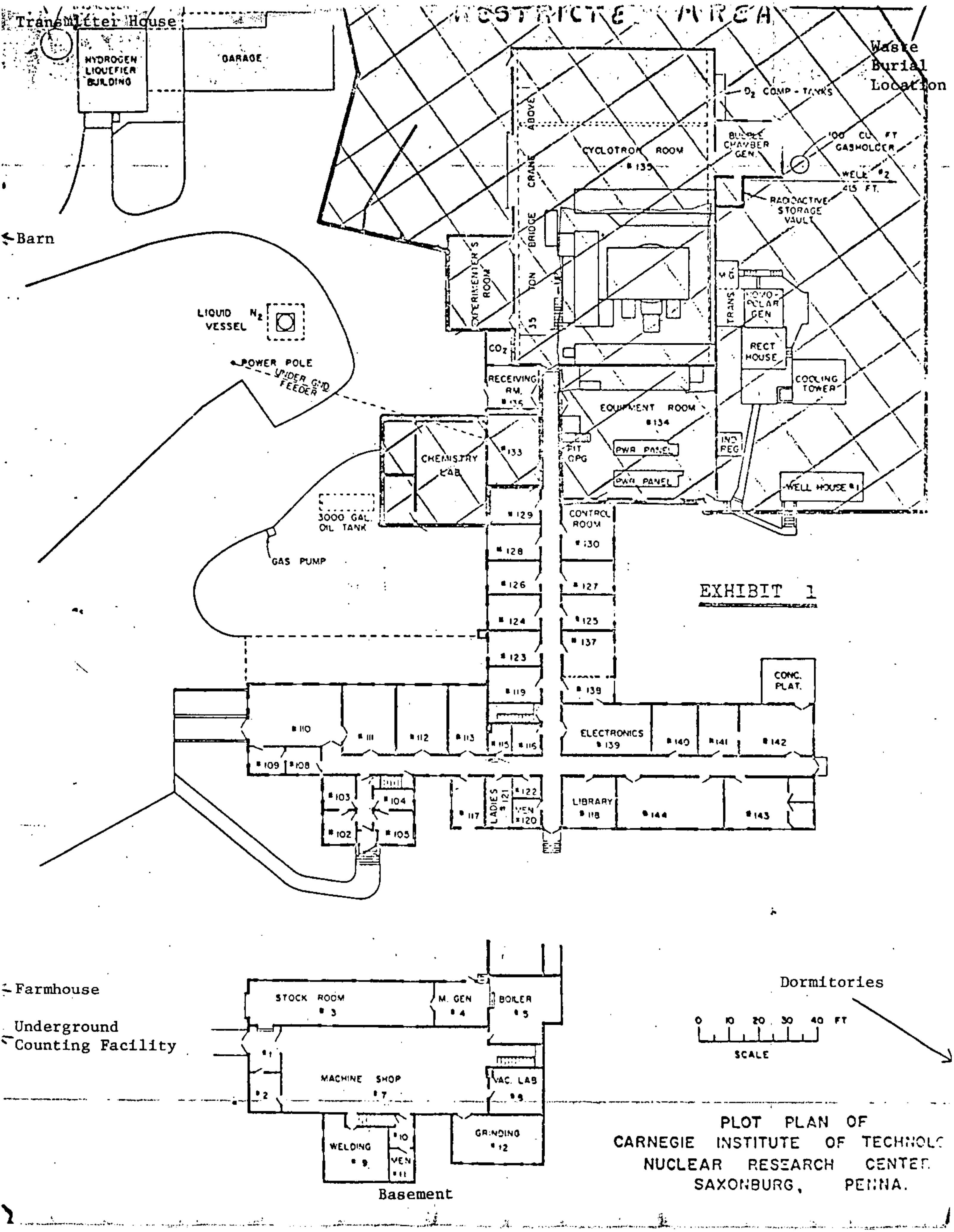
Due to the short time period available to complete the effort, we would greatly appreciate receiving comments you may have on the planned or completed actions by September 25, 1975. If you have any questions, please contact B. J. Davis on Ext. 2165.

Robert H. Bauer
Manager

SD:BJD

Enclosures:
1. Plot Plan of Carnegie Institute of Technology, Nuclear Research Center
2. Radiation Levels, Nuclear Research Center, June 20, 1975
3. Exposure Rate Over Pit Area, Nuclear Research Center, August 5, 1975

cc: P. McGee, R, HQ, w/o encls.
E. Ritter, R, HQ, w/o encls.


RESTRICTED AREA
Transmitter House
HYDROGEN LIQUEFIER BUILDING
GARAGE
Waste Burial Location
D_2 COMP - TANKS
ABOVE
CRANE
BRIDGE
TON
35
CYCLOTRON ROOM
#135
BUBBLE CHAMBER GEN.
100 CU FT GASHOLDER
WELL #2 415 FT.
RADIOACTIVE STORAGE VAULT
← Barn
EXPERIMENTER'S ROOM
LIQUID N_2 VESSEL
POWER POLE
UNDER GND FEEDER
CO_2
M G
TRANS
HOMOPOLAR GEN
RECT HOUSE
COOLING TOWER
RECEIVING RM.
EQUIPMENT ROOM
#134
PIT CPG
PWR PANEL
PWR PANEL
IND REG
WELL HOUSE #1
CHEMISTRY LAB
3000 GAL. OIL TANK
GAS PUMP
CONTROL ROOM
EXHIBIT 1
CONC. PLAT.
ELECTRONICS
LIBRARY
LADIES
MEN
← Farmhouse
Underground Counting Facility
STOCK ROOM
M. GEN
BOILER
MACHINE SHOP
VAC. LAB
WELDING
GRINDING
MEN
Basement
Dormitories
0 10 20 30 40 FT
SCALE
PLOT PLAN OF
CARNEGIE INSTITUTE OF TECHNOLC
NUCLEAR RESEARCH CENTEF
SAXONBURG, PENNA.